



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/414,004	10/07/1999	VICTOR KATSAP	KATSAP 7-1-1-12	2693
47396	7590	06/18/2007		
HITT GAINES, PC LSI Corporation PO BOX 832570 RICHARDSON, TX 75083			EXAMINER VANORE, DAVID A	
			ART UNIT	PAPER NUMBER
			2881	
			NOTIFICATION DATE	DELIVERY MODE
			06/18/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

docket@hittgaines.com



**UNITED STATES DEPARTMENT OF COMMERCE
U.S. Patent and Trademark Office**

Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450

09/414,004

APPLICATION NO./ CONTROL NO.	FILING DATE	FIRST NAMED INVENTOR / PATENT IN REEXAMINATION	ATTORNEY DOCKET NO.
---------------------------------	-------------	---	---------------------

EXAMINER

ART UNIT	PAPER
----------	-------

20070611

DATE MAILED:

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner for Patents

A corrected copy of the previous Office action, with corrected page numbers is attached to this letter. The period for reply shall be reset given the misnumbering of pages in the previous Office action.

David A Vanore
Primary Examiner
Art Unit: 2881

Office Action Summary

Application No.

09/414,004

Applicant(s)

KATSAP ET AL.

Examiner

David A. Vanore

Art Unit

2881

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 41-50, 52, 53, 55-67, 69 and 70 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 41-50, 52, 53, 55-67, 69 and 70 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 October 1999 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed December 12, 2006 have been fully considered but they are not persuasive.
2. Applicant has traversed the Double Patenting rejection on the grounds that the earlier issued patent and the instant application have the same statutory date. Having considered these remarks at pages 7-8 of the response and MPEP § 800 concerning Double Patenting, the examiner has not found in the MPEP where a Double Patenting rejection may be withdrawn because policy reasons are missing. Therefore, the rejection is maintained.
3. Regarding the traversal of the 35 USC 102(b) rejection by Hunter, Applicant has argued that the beamlets converge after passage through a control grid. Initially, the grid extracts a plurality of beamlets from an electron gun as shown in Fig. 1, 3, and 4 for example. Furthermore, such arguments against Hunter relate the apparatus to the contents thereof during an operation of the device. Note MPEP 2115. All structural elements required by the claim are disclosed in Hunter as previously pointed out.
4. Applicants remarks concerning the rejection of claims under 35 USC 103(a) similarly rely on the same purported deficiency of Hunter and are not persuasive for the same reasons.

Double Patenting

5. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the

Art Unit: 2881

unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claims 41 and 58 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 2 of U.S. Patent No. 6,333,508.

Although the conflicting claims are not identical, they are not patentably distinct from each other because of the following reasons:

5. The claims of the pending application recite the same structural elements, or function, but utilize different terms to describe the function or structure.

6. For example, pending claims 41 and 58 conflict with patented claim 1. The term electron gun is reflected in the reference by the term "source of accelerated electrons" or "cathode", and the term lens array being reflected in the reference by the term "charged-particle beam emittance controller". The prior art lens array is recited as being disposed in between the anode and cathode, or in the drift space defined by the anode and cathode (Note patented claim 2).

7. Therefore, though the pending claims recite fewer elements and utilize different terms to describe the elements and functions recited in the patented claims, that which is claimed and patented in claim 2 of USPN 6,333,508 is the same as that which is recited in pending claims 41 and 58.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 41-43, 47-48, 52-53, 56, 59-60, 64-65, 67, and 69-70 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Hunter (USPN 3,852,633).

10. Regarding claims 41 and 58, Hunter teaches providing an electron gun for providing an electron beam (Item 3), and a lens array (Item 12) in a drift space between the electron gun and a drift tube (Item 6), the lens array splitting the beam into a plurality of beamlets, the drift space having therein only electric field lines which originate in the drift space (Note Fig. 4).

11. Regarding claims 42 and 59, there is at least one lens array (Item 12 in Fig. 3) in the electron gun assembly.

12. Regarding claims 43 and 60, the lens array (12) is placed in a liner tube (13) connected to the electron gun.

13. Regarding claims 47-48 and 64-65, the lens array of Hunter utilizes at least two mesh grids (Item 12).

14. Regarding claims 50 and 67, the lens array elements depicted in Fig. 7 and 10 are continuous, and therefore represent continuous foils.

15. Regarding claims 52 and 69, the grid transparencies in the Hunter reference is between 65 and 75 percent (Col. 4 Lines 1-14), satisfying the required range recited in claims 52 and 69.

16. Regarding claim 56, the grid apertures have a pitch, and each aperture generates a beamlet having a diameter or at least the diameter of the grid opening at the point the beam intercepts the grid (Note Fig. 2 and Fig. 3).

17. Regarding claims 53 and 70, the device of Hunter is an electron beam exposure system tool, or EBES tool.

Claim Rejections - 35 USC § 103

18. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

19. Claims 44-46 and 61-63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hunter (USPN 3,852, 633) in view of Feinstein (USPN 3,886,398).

20. Hunter teaches all the required limitations of claims 43 and 60 as pointed out above, but fails to teach or suggest sealing a liner tube to an electron gun assembly such that a vacuum seal is created between the two elements.

21. Feinstein teaches an electron gun assembly having a cathode and disposed at the left of Fig. 1, and further teaches a liner tube housing the electron gun (Item 12) and is further coupled in a vacuum tight fashion to a drift tube (Item 15).

22. Feinstein modifies the Hunter prior art to provide a liner tube or drift tube affixed to an electron gun in a vacuum tight manner.

23. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a liner or drift tube affixed to the electron gun in a vacuum tight fashion, because Feinstein teaches that when the liner, electron gun, and drift tube are evacuated, beam transmission may then commence with minimal loss of

beam power and contamination (Col. 4 Lines 3-14), where the bolting or welding of two members to affix them in a vacuum sealed relationship is well known in the art.

24. Claims 49, 57, and 66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hunter (USPN 3,852, 633) in view of Symons (USPN 5,932,972).

25. Hunter teaches all the required limitations of claims 41 and 58 as pointed out above.

26. Hunter fails to teach the use of a third grid electrode, thus failing to teach a device having a lens array with an odd number to mesh grids, two outer grids having a curved shape.

27. Symons teaches an electron gun having a plurality of grids, at least three, the outer two of which have a curved shape (Note Fig. 1).

28. Symons modifies the prior art of Hunter to provide a plurality, three or more, of precision crafted lens array grids as depicted in Fig. 1.

29. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide three or more lens array grids because Symons discloses that the use of plural grids, disposed accurately on the equi-potential lines in a drift region, provides for the shaping of a well focused, and laminar plurality of beamlets (Col. 3-4).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David A. Vanore whose telephone number is (571) 272-2483. The examiner can normally be reached on M-F 7:30-5:00.


6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (571) 272-2293. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2881

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


David A Vanore
Primary Examiner
Art Unit 2881

dav